CONTENTS

THE INTEGRATED SCIENCE OF *YAGNA*

In this book, a brief account of *Yagna* is presented. Scientific basis of the major effects of *Yagna* is discussed along with some findings of modern research on its effects on health care and purification of the environment. Psychological and spiritual benefits are also highlighted in brief.

1. ORIGIN & PHILOSOPHICAL FOUNDATIONS OF *YAGNA* -- A BRIEF INTRODUCTION

Gayatri and *Yagna* are described as the pillars of Indian philosophy and culture. The eternal source of universal knowledge, comprised in the *Gayatri Mantra* is deciphered and the cosmic energy of sound contained in *Mantra* is activated and expanded with the help of *Yagna*.

The four Vedas signify the philosophy of the eternity and absolute complementary role of *Gayatri* and *Yagna* in the divine creation. Atharvaveda also deals with sound therapy aspects of *Mantras* for the treatment of the ailing human system at the physical, psycological and spiritual levels. The Samaveda focuses on the musical chanting patterns of the *Mantras* and the subtle form of *Yagna* by defining the latter as the process of mental oblation on the surface of internal emotions through the cosmic radiation of the omnipresent subtle energy of sound. The Yajurveda contains the knowledge of principles and methods of performing *Yagnas* as Spiritual and Scientific experiments for global welfare [1].

Literally speaking, *Yagna* means --- selfless sacrifice for noble purposes. Sacrificing of the ego, selfishness and material attachments and adopting rational thinking, humane compassion and dedicated creativity for the welfare of all ---- is indeed the best *Yagna* which should be performed by all human beings. The philosophy of *Yagna* teaches a way of living in the society in harmony, a living style to promote and protect higher humane values in the society --- which is indeed the basis of the ideal human culture.

The *Seva Yagna* --- altruist service of the society is a noble example of *Yagna*. The *Gyana Yagna*, similarly implies the service of people by enlightening their lives in the glow of knowledge and education. The *Prana Yagna* implies --- the service of saving the lives of people from suffering and agonies and inspiring liveliness and respect for life in them. A variety of such *Yagnas* are described in the *Shastras*. This book focuses on the *Yagnas* performed for physical experimentation.

In physical terms, *Yagna* is a process aimed at the refinement of the subtle energy existing in matter with the help of thermal energy of the *Mantras*. The knowledge of philosophy and science of *Yagna* is as essential for understanding and experimenting the science of spirituality as the knowledge of elementary physics is for material based sciences. The experiments of *Yagna,* when performed at a small scale in day to day life are called --- *Havan* or *Agnihotra*.

2. SCIENTIFIC ASPECTS OF *YAGNA*

There are two basic energy systems in the physical world: Heat and Sound. In performing *Yagna*, these two energies, namely, the heat from *Yagna*'s fire and the sound of the *Gayatri* and other *Mantras*, are combined to achieve the desired physical, psychological and spiritual benefits.

The fumigation of specific substances in the *Yagna* --- fire is a scientific method of subtilisation of matter into energy and expanding its potential and positive effects in the surrounding atmosphere. The electromagnetic waves generated thereby help in transmitting at cosmic level, the desired sonic signals 'stored' in the *Mantras*, which are chanted during the process of sacrificing the special materials in the fire.

2.1. Fumigating Substances Used in *Yagna*:

In order to get an idea of the various chemical changes which take place, it is essential to know the various substances offered in *Yagna*. They are principally as described below (c.f.[2]):

(A) Wood:

Wood has to be dry and free from dust, insects and worms. The wood is cut into small sticks of varying lengths called *Samidhas* according to the size of the altar or *Agnikunda*. The principal types of wood used are the following:

I. Sandal-wood (*Santalum Album*)

II. Agar and Tagar wood (*Aquilana Malaccensis and Valeriana Wallchii*)

III. Deodar (*Cedrys Libani*)

IV. Mango (*Mangifera Indica*)

V. Dhak or Palash (*Butea Frondosa*)

VI. Bilva (*Aegle Marmelos*)

VII. Pipal (*Ficus Religiosa*)

VIII. Bargad (*Ficus Bengalensis*)

IX. Shami (*Proposis Spicigera*)

X. Gular (*Ficus Glomerata*)

In addition to wood, various *Havishya* or *Havan samagri* are offered in *Yagna* can be divided into the following four groups:

(B) Odoriferous Substances :

These are --- saffron, musk, *agar, tagar*, *chandan, illaychi, jayphal, javitri* and camphor.

(C) Substances with Healthy Constituents:

These are clarified butter (*ghee*), milk, fruits and cereals like wheat, rice, barley, *til, kangu, munga, chana, arhar, masur or peas*.

(D) Sweet Substances:

These usually are --- sugar, dried grapes, honey or *chhuhara*.

(E) Medicinal Herbs:

These are used as per specific requirement. Some common herbs are *Somalata or Giloya, Brahmi, Shankhpushpi, Nagkesar, Mulhati, Red Chandan, Baheda, Sonth and Harad.* Now-a-days *Havan samagri* is readily available in the market consisting of the following substances in a crude powder form:

Saw dust of sandal-wood and pine wood, the *agar* and *tagar* wood chips, *kapurkachari, gugal, nagarmotha, balchhaar or jatamansi, nar-kachura, sugandhbala, illayachi, jayphal, clove and dalchini.*

2.2. Products of Combustion:

At the outset, it can be said that the interpretation of process of combustion in a Yagna in a physical scientific terms is rather difficult due to the following reasons:

(i) The properties of substances which are used is vastly varying;

(ii) The conditions under which combustion takes place remain unspecified. The products of combustion depend on the following factors like --- (a) The nature of substances used and their proportions; (b) Temperature attained; (c) Controlled supply of air and (d) Interaction amongst the various products formed.

2.2.1. Vapourization of wood:

Besides complete combustion of cellulose material of wood, it is also subjected to vapourization. This happens

due to the way *Samidhas* are arranged in the *Agnikunda,* the conditions of temperature and air supply which prevail in it.

2.2.2. Steam Volatilization of Odorous Substances:

The temperature attained in the *Kunda* varies between 250°C and 600°C, while in actual flames it can go as high as 1200°C to 1300°C. The boiling points of volatile constituents get diffused in the surrounding atmosphere. Also when cellulose and other carbohydrates undergo combustion, steam is formed in copious quantities by the combination of hydrogen of organic substances with the oxygen. This is how the substances like thymol, eugenol, pinene, terpinol etc., are carried over in the surroundings and the aroma of a *Yagna* can be smelt even at a considerable distance.

In addition to steam, smoke is also given out in copious quantities and solid particles existing in a highly divided state offer sufficient surface for mechanical diffusion. Thus smoke also functions as colloidal particles for diffusion of volatile aromatic substances depending on temperature and direction of the wind.

2.2.3. Combustion of Fatty Substances:

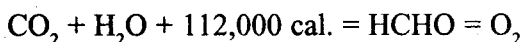
The fatty substances used in *Yagna* are mainly *ghee* and other fatty substances of vegetable origin. Ghee helps in rapid combustion of cellulose of wood and keeps the fire

FIG. 1 : SOME YAGNA-KUNDAS

alight. All fatty substances used are combinations of fatty acids, which volatilise easily. The combustion of glycerol portion gives acetone bodies, pyruvic aldehyde and glyoxal etc. The hydrocarbons produced in the reactions again undergo slow combustion and as a result methyl and ethyl alcohols, formaldehyde, acetaldehyde, formic acid and acetic acids are formed.

2.2.4. Photo-Chemical process

When all the volatile substances are diffused in the surrounding atmosphere, these are further subjected to photochemical reactions in the sunlight. This may be the reason why it has been recommended that *Yagna* should be performed in the presence of strong sunlight. These changes occur in the ultra-violet and other short wavelength regions. The products of fumigation thus go photochemical decomposition, oxidation and reduction. To some extent even CO_2 is also reduced to formaldehyde as follows:

$$CO_2 + H_2O + 112{,}000 \text{ cal.} = HCHO = O_2$$

From environmental purification, reduction of CO_2 produced in *Yagna* as above and liberation of oxygen cannot be over looked.

2.3. Inverted Pyramid Shaped Agni *Kunda*:

The word 'pyramid' means the fire in the middle'. This ancient-word meaning for pyramid is closely connected with the inexplicable energies emanating from its central

shape. The pyramid shape is widely experienced to generate and store a special energy field, which possess bacteriostatic properties. The inverted pyramid shape of the *Agni kunda* (also called *Havan Kunda*)[1] allows controlled generation and multidirectional dissipation of energy. It acts as a generator of unusual energy fields and spreads them in its surrounding atmosphere.

For a daily *Agnihotra* (*Balivaishva*), a small copper pot is used. The inverted pyramid shaped Agnihotra pot receives , generates and decentralizes electrosphere. It acts as an effective bacteriostatic and antimicrobial reactor. Copper is universally acknowledged for its excellent conduction of electricity and heat. The *Agnihotra* has an obvious link with fire, heat, electro-magnetic force and because of its inverted pyramid shaped *Kunda*, it does have connection with the cosmic energy fields.

The dimensions of the copper pot used for the daily *Agnihotras* are: 14.5 cm×14.5cm at the top. 5.25cm×5.25 cm at the bottom and 6.5 cm in height with three steps. For large scale *Yagnas*, the dimensions are increased proportionately and the *Kunda*s are also made up of specific combinations of clays. A part from the pyramid shape, some other special symmetric geometrical designs are also used according to the kind of energy fields and the cosmic currents required to be generated by the *Yagna*. Specific types of *Kunda*s are recommended for different kinds of *Yagnas*. Shapes of the common *agnihotra* pot and some *Yagna Kunda*s are illustrated in figure 1.

[1] A pit for sacrificial fire or a pot (altar) or small reservoir / clay-structure (made up on the ground in which the *Yagna* fire is lit.)

2.4. Chanting of Sanskrit *Mantras*:

The power of sound vibrations is long since acknowledged in the field of science.These vibrations can penetrate the energy spheres at the subtle and cosmic levels. All the alphabets of the Sanskrit language are endowed with special vibrational powers, which set out harmonious wave patterns when pronounced.

It is interesting to note that Dr. Howard Steingull, an American Scientist has established that recitation of *Gayatri Mantra* produces 110,000 sound waves per second. In fact recitation of the *Gayatri Mantra* during the fire-worship (*Yagna*) acts supplimentary. The patterns of chanting of *Mantras* are so designed that they latently contain the essence of the music or the quite essential sound of the torrent of life sustaining energies emanating from the cosmic energy centre of the corresponding *Mantras*. (The cosmic energy centre a diety associated with the *Gayatri Mantra* is Sun). Uttering of these *Mantras* produces vibrations which are soothing to human mind, all plant and animal life. These vibrations also help in spreading specific energy waves in the surrounding atmosphere as the oblations are offered.

3. PURIFICATION OF ENVIRONMENT BY *YAGNA*

The industrial wastes, rapid urbanization, deforestation, air and water pollution, disturbances in the ozone layer - formation, radioactive waves etc., have destablized the human, animal and plant life cycles. The ecological imbalance caused by these acts of 'civilized men' has resulted in disastrous threat not only to human survival but to the life as a whole on our planet.

Till recently it was accepted that research into science can furnish answer to all of man's problems. Today we find increasing number of diseases including malfunctioning of body organs due to increasing severity of pollution in the atmosphere. Ozone layer depletion has been causing ailments like sunburn, skin cancer, cataracts and weakening of the immune system. Viruses are becoming drug-resistant and showing consistent growth trends.

Experimental studies show that the incidence of physical ailments, sickness and disease are reduced in the houses, where the *Yagna* (*Agnihotra*) is regularly performed because it creates a pure, nutritional and medicinal atmosphere. It renews the brain cells, revitalizes the skin, purifies blood and prevents growth of pathogenic organisms.

Agnihotra is basically a healing process. 'Heal the atmosphere and the healed atmosphere will heal you'--- is the Modus Operandi [5].

Purification of environment through the constituent electrons of the substances fumigated in the *Yagna* is an obvious effect of this process [2-4]. The observation of some distinguished scientists are note worthy in this regard.

Dr. Hafkine has mentioned that --- "mixing ghee and sugar and burning them creates smoke which kills the germs of certain diseases and secretion takes place from some glands related to the wind-pipe, which fill our heart and mind with pleasure.

Sugars present in *Havishya* have great power to purify the atmosphere. It kills the germs of T.B., measles, small-pox and cow-pox --- remarks Prof.. Tilward.

According to Dr. Shirowich, a Russian scientist has remarked that (i) Cow's milk contains great power of protection from atomic radiation; (ii) Houses having cow-dung covered floors enjoy complete protection from atomic radiation; (iii) If cow's ghee is put into *Yagna* fire, its fumes lessen the effect of atomic radiation to a great extent.

The medicinal fumes emanating from *Agnihotra* have been observed by researchers in the field of microbiology to be clearly bacteriolethal in nature. These eradicate bacteria and other micro-organisms, which are the root cause of illness and diseases. This must be the reason why the incidence of physical ailments, sickness and diseases becomes less in the households, where *Agnihotra* is regularly performed.

Even without going into detailed chemical bacteriology, it can be stated that performance of *Yagna* leads to purification of air. This takes place in the following four ways [2]:

3.1. Removal of Foul Odours:

As already stated, under steam volatalisation, the various volatile oils get diffused in the surrounding atmosphere along with steam and smoke. Since these oils have distinct good smell, the foul odours are automatically replaced. This aroma can be experienced easily in the surroundings when *Yagna* is performed due to diffusion of substances like thymol, eugenol, pine, terpinol and oils of sandal-wood, camphor and clove.

3.2. Removal of Bacteria:

As stated under products of combustion, the partial oxidation of hydrocarbons and decomposition of complex organic substances produce formal dehyde which is a powerful antiseptic. It is also interesting to note that germicidal action of formaldehyde is only effective in the presence of water vapour which is also produced in large quantities in *Yagna*. The use of formaldehyde spray for disinfecting of walls, ceiling etc., is common and such a spray is automatically produced when *Yagna* is performed.

The oxidation of hydrocarbons also produces formic acid and acetic acid both of which are good disinfectants. Use

of formic acid for preservation of fruits and that of acetic acid in preserving vinegar is a common practice.

The antiseptic and antibiotic effects of fumes of *Yagna* have also been examined by conducting suitable experiments on rabbits and mice and it has been established that fumes emitted in *Yagna* are powerful antibiotic.

Agnihotra ash purifies and cleanses the water making it fit for drinking [5].

3.3. Removal of insects:

There are non-bacterial parasites like flies, ringworm, dice, fleas etc., which are immune to bactericides, which are also harmful to other living beings. Such insects which are generally immune to ordinary reagents, however they either get killed or are driven away, when they come in contact with the fumes of volatile oils like camphor diffused in the environment.

3.4. Effects on Plants and Vegetation:

The disinfection of air is not only useful to animal life but also helps plant's life though the bacteria responsible for diseases in both may be different. The aromatic substances during *Yagna* get diffused in the air and offer protection to plant life against harmful organisms. This ensures healthy plant growth. *Agnihotra*'s atmosphere and ash can be used as adjuvants in the 'Natural farming' methods --- also known as the *Agnihotra* farming methods. It is a holistic concept of growing plants in healthy atmosphere

and maintaining ecological balance by performing *Agnihotra* (*Yagna*) in the middle of the farm and using the *Yagna* - ash as a fertilizer. It is not only safe and productive but also holistic in its approach towards environment.

3.5. Role of CO_2 generated in *Yagna*:

Consignment of the wood and other organic maters to flames has been always controversial because of generation of CO and CO_2 and increase in consequent 'green house' effect. It had been argued that performance of *Yagna* also produces CO and CO_2. It should be noted here that the way in which the *Samidhas* and *Havishya* are burnt in *Yagna* is a process of slow combustion at higher temperature. While the burning of coal in factories or in the household fire involves rapid combustion. where oxygen is sucked in large quantities and enormous CO_2 is emitted. In the slow combustion taking place in the process of *Yagna*, small quantity of O_2 is utilised, meagre CO_2 is emitted that poses no threat to the environment. In fact, whatever CO_2 is generated it is readily absorbed by the surrounding vegetation and CO_2 cycle is strengthened [4].

The other important aspect is the fact that CO_2 produced in *Yagna* is not always free CO_2 but it remains mixed with other aromatic oils and antiseptic products. It therefore, acts as a vehicle in transporting such products to distant surroundings.

The use of CO_2 as a cerebral stimulant to assist the patients suffering from lack of ventilation is common in medical world. Its use to control and cure many mental disorders is also known to medical science. Small amounts of CO_2 inhaled by the persons performing *Yagna* acts as a stimulant and more and more aromatic fumes are inhaled which help in curing mental disorders.

Particularly effective results with respect to he elimination or reduction in radiation were achieved through *Yagna*'s fire and ash. These observations are made by Dr. L. Maela Anatoninhowska of Poland after using P.S.I. techniques.

3.6. Results of Some Recent Experiments:

A group of scientists led by Dr. Manoj Garg, Director, Environmental and Technical Consultants and the Uttar Pradesh pollution control board conducted experiments during the *Ashwamedha Yagna* at Gorakhpur, U.P. These experiments were set up at about 20 meters east from the *Yagnashala*. The samples of 100 ml each of water and air collected from the surroundings were analysed using high volume envirotech APM-45 and other sensitive instruments. A summary of their results ([1] - Akhand Jyoti, Sept. '97 p.22) is presented below:

In Air Samples (unit mg per average sample)

Instant	Level of Sulphur dioxide	Level of Nitrous Oxide
Before Yagna	3.36	1.16
During Yagna	2.82	1.14
After Yagna	0.80	1.02

Bacteria Count in Average Water Samples

Before Yagna	4500
During Yagna	2470
After Yagna	1250

Minerals in the Ash (*Bhasm*) of *Yagna*

Phosphorous	4076	mg per kg.
Potassium	3407	mg per kg.
Calcium	7822	mg per kg.
Magnesium	6424	mg per kg.
Nitrogen	32	mg per kg.
Quispar	2%	W/W

These results clearly support the claims made about the role of *Yagna* in control of air pollution. The Deputy Director, Agriculture had submitted a technical report based on such results, recommending the use of *Yagna*'s ash as an effective fertilizer.

Comparable results were also obtained by the scientific experiments conducted in about 27 large scale *Yagnas* organized by Shantikunj, Hardwar in India and abroad during 1993-1995.

4. YAGNOPATHY-MEDICINAL APPLICATIONS OF *YAGNA*

Amidst the fascinating achievements of the modern era of science and technology in improving our comfort levels, stress and pollution have posed the major challenge for man. The world is beginning to realise that the comforts provided to us by modern science and technology do not necessarily always make life easier. In fact, apart from greater stress and tension, more unknown diseases, untold anxiety and fear is caused by the highly polluted environment and ecological imbalance. This has raised alarming call for rethinking and guiding the common life style. *Yagna* appears to be a boon of the ancient Indian sciences for achieving this purpose.

In a physical laboratory, it might not be possible to demonstrate the spiritual effects of *Yagna*, but the physical and mental effects of *Yagnas* can be certainly tested, and the claims to cure physical and mental diseases through *Yagna* can be verified [3]. The Brahmavarchas Shodha Sansthan (a scientific research centre in Hardwar, India) has taken up research on this aspect of *Yagna*.

It is to be noted here that the traditional systems of treatment of physical diseases employ medicines which are

mostly administered orally. They, therefore, produce effects only after they have been digested and absorbed into the system. Most part of the medicine taken orally is not utilized by the digestive system. Such medicines may also upset digestion seriously. The same is more or less true for medicines directly injected into the blood. They produce results quicker, but their adverse side effects are often more pronounced. White corpuscles of the blood resent intrusion of any foreign bodies into the blood, and sometimes the reaction of the system to the sudden, massive and direct intrusion of foreign matter into the blood through injection proves most serious, and even fatal. In a *Yagna*, medicines and herbs are vaporised by offering them into the sacrificial fire, and they enter the human body in a gaseous form through the nose, lungs and the pores of the skin. This might be proved to be easiest, least taxing, least risky and most effective method of administering a medicine so as to reach every single cell of the body.

The possibilities of curing mental diseases by *Yagna* are even more alluring. Diagnosis and treatment of mental disorders is still in its infacy in the modern systems of treatment. There are neither well established diagnostic aids, nor any recognised system of treatment of diseases like Neurosis, Psychosis, Schizophrenia, Depression, Tension, Melancholia, Mania, Hysteria etc. On the other hand, psychosomatic diseases are even more rampant than physical diseases and they wreck the man more than the latter.

Manifestation of psychosomatic diseases except in extreme and advanced cases are not so apparent, and that may explain why enough attention has not been paid to them. The stress and strain of modern life, degradation of social behaviour and fall in moral values all around are contributing to an alarming increase in psychosomatic diseases. *Yagna* might offer a solution to this serious problem as well.

The technique of *Yagna* for the treatment of physical and mental diseases does not comprise mere vaporisation of the constituents or herbs to be employed, but various *Samidhas* are offered into the sacrificial fire of *Yagna* to create the desired effects. Research on all these aspects of *Yagna* is being conducted in the laboratory of Brahmvarchas. It might well lead to the development of a scientifically established Yagnopathy, which may find not only an honoured but a leading place in other therapies of the world like Allopathy, Homeopathy, Chromopathy, Naturopathy, etc. Looking to the high intellectual calibre and attainments of those who are engaged in research, Yagnopathy may come into being sooner than expected, and it may rank an unique achievement of the modern age.

4.1. Results of Research in Scientific laboratories:

In his study, Dr. Selvamurthy has observed neurophysiological effects of the *Mantras* of a special kind of

Agnihotra (described in the next section) which is performed at the time of sunset. In this experimental study, 8 healthy men were chosen as subjects. They use to report at 4 p.m. on two consecutive days. First day for control recording when rituals of *Agnihotra* were performed but instead of the prescribed *Mantras*, some irrelevant syllables were uttered at specific time periods. Next day evening the *Agnihotra* used to be performed with proper *Mantras*. Recording of physiological parameters viz. Heart rate, ECG, EEG, GSR, blood pressure were made on both days.

The results showed that while the mind (brain waves) remained unaltered before *Agnihotra*, significant changes occurred after the proper *Agnihotra*. These included --- (a) G.S.R. remained significantly higher due to proper *Agnihotra*; (b) ECG showed DC shift in the base line; (c) EEG showed alpha enhancement and delta suppression for more than 15 minutes.

In recent years, the science of medicine has begun to recognize the role of psychology in prevention and cure of malady. 'As the atmosphere, *Prana* and mind' are inter linked, the individuals automatically experience relaxation, peace, unburdening of the mind, loss of worries and stress in the *Yagna* atmosphere. The increase in the level of *Prana* (vital energy) in the atmosphere where a *Yagna* is performed --- was also recorded with the help of Kirlian photographs of human hands before and after *Yagna* in the experiments conducted by Dr. Matthias Ferbinger of Germany.

The atmosphere surrounding the place where a *Yagna* is being performed and the ash produced in the *Kunda* has been found useful in healing nervous system disorders, asthma, heart diseases, lung infections, a wide variety of skin diseases and the diseases of the eyes and ears. Analysis of ash has indicated that it contains certain ingredients, which soothe, pacify and tranquillize the mind.

4.2. Some Case Studies:

The following sample of case studies was reported in [5].

(A) Drugs and Alcoholic Addiction:

An officer of 25 years age, who has been a poly-drug abuser in the past was selected for the study by Lt. Col. G.R. Golecha, a senior advisor in the psychiatry division of the Indian army. The patient was addicted to heroin for the last 2 years. He had undergone some de-addiction courses twice in past with no benefit and had become resistant to such methods. He was then introduced to *Agnihotra*.

A rating scale was developed by Dr. Golecha to roughly quantify and compare the improvement. The practice of *Agnihotra* resulted in improving his psycology to abstain from smack and significant decrease of his urge for it within few weeks was caused.

Conclusion: *Agnihotra* helps drug addicts to get over their craving for drugs because *Agnihotra* removes negative stereotype thoughts and motivates for positive approach by love and compassion.

All the psycho therapeutic advances have failed to control a habitual addict. *Agnihotra* is a new hope in this field.

(B) Diabetes and *Agnihotra*:

Case-Report

Name of patient: Pandurang M. Patil Age: 72 yrs.

Address: Sai Prabha, Mangvir Pakhadi
Post-Tal-Alibaug, Dist - Raigad (M.S.)

Case: One year old diabetic.

Before starting *Agnihotra* --- Report on 6-05-1993

1) Fasting:
   Blood Sugar: 285 mg/dt (Normal 70-110)
   Urine Sugar: Present ++++
2) Post Lunch (2 hrs. after lunch):
   Blood Sugar: 530 mg/dt (Normal upto 120)
   Urine Sugar: Present ++++

After performing daily *Agnihotra* --- Report on 24-07-93

1) Fasting:
   Blood Sugar: 95 mg/dt (Normal 70-110)
   Urine Sugar: Absent
2) Post Lunch
   Blood Sugar: 120 mg/dt (Normal upto 120)
   Urine Sugar: Absent

The above case report result has been furnished by medicare pathology laboratory.[2]

[2]Address, as reported in [5] is -- R 33 Swapnamurti, Alibaug, Raigad. Case was referred by a well known doctor -- Dr., Mrs.Morkhadker (MD).

Conclusion: The above cases suggest that daily *Agnihotra* will be useful in treating a diabetic patient of any age, at any level within 3 to 6 months.

(C) Bhopal Gas Tragedy and *Agnihotra*:

The incidence occurred on the deadly night of December 3, 1984, when the poisonous MIC gas leaked from Union Carbide. Hundreds of people died and thousands were hospitalised. There were, however, two families of --- Sh. Sohan Lal S Khushwaha and Shri. M.L. Rathore, which lived in the worst affected area, one mile away from the plant came out unscathed as they were regularly performing *Agnihotra* (*Havan*). In these families, no one died. Nobody was even hospitalised despite of being present in the area worst hit by the toxic gas. This observation proves that *Agnihotra* is a powerful antidote to pollution. (cf.. News Paper 'The Hindi' of 4-5-85; news item under the heading 'Vedic Way to Beat Pollution').

4.3. The Yagnopathy lab at Brahmavarchas:

The Brahmavarchas Research Centre was established by Pt. Shriram Sharma Acharya in 1979. It is situated at Saptsarovar road about 6 kilometres away from Hardwar station towards Rishikesh in India. This centre is actively

working for the integration of the modern and ancient sciences. Innovative scientific research is being carried out in the science of spirituality. A part from the dedicated team of scientists, doctors and engineers and other scholars of high calibre well equipped laboratories for relevant research in different scientific disciplines including neurology, biochemistry, haematology, phytochemistry and sound therapy etc.are present. Other features of attraction over here are the Botanical Garden of about 450 herbs which include some rare species of Himalayan herbs and Yagnopathy lab.

The Yagnopathy laboratory has a *Havan Kunda* placed in a gas chamber. A gas analysis wing for the collection and analysis of the fumes and vapours of *Yagna* is at work. The efficacy of various ingredients of the *Havishya* and the *Samidhas* are assessed in the phytochemistry lab, which is well equipped for analytical purposes with gas liquid chromatograph [6,7].

Blood samples are kept in the glass chamber, when it is full of fumes and vapours of the daily *Yagna* (*Havan*) and the changes in the blood biochemistry and haematological characters are assesed for these samples.

A large number of experiments are carried out on healthy and diseased persons, living on the campus for specific periods. The subjects include the *Sadhakas,* as well as non *Sadhakas* of all age groups, men and women from all walks of life irrespective of their social or religious background. During such experiments, the subject sits in

the glass chamber and inhales the fumes of *Yagna* for specific period. A thorough analysis of their body and mind is made before and after performing this experiment.

Haematological parameters like Hb, TRBC, Platelets, RBC fragility etc., biochemical changes like those in the levels of blood urea, sugar, cholesterol, certinine, SGOT, SGPT etc; are estimated. The immunological changes like the antibody levels and innate immunity towards various pathogenic offending organisms, is also assessed.

Various hormones like cortisol, thyroxine, ACTH, androgens etc. are assessed in the endocrinology lab. The EEG, EMG and ECG recordings are carried out in the neurophysiology labs. The psychometry lab assesses the aptitude, learning potential, memory, the intelligent quotient, emotional quotient and the overall personality makeup of the subjects. The case are followed on regularly after treatment with *Yagna* for a week, or a month.

The technical details and results of experimental research will be published subsequently in the relevant scientific journals for therapeutic use of different herbs by means of *Yagna* and research pursue on herbal medicines to save way for other scientific applications of *Yagna*.

The general implication of the results obtained so far is that performing *Yagna* significantly enhances the vitality and resistance against adverse matero-biological changes and the invasion of otherwise lethal viruses and bacteria.

Mental peace, emotional stability and creative development of the mind are other fruitful observations of research on the psychological fronts.

The experimental studies in this lab would also be extended to animals, birds and plants to see how the energy released by *Yagna* affects the animal and vegetable kingdoms and the environment as a whole.

5. A SIMPLE *AGNIHOTRA* FOR DAILY PRACTICE

Environmental pollution and 'mechanical' approach to life today is adversely affecting the human mind and body. Increase in the incidence of a wide variety of diseases and the downfall of moral values adding to stress, strain, hatred, jealousy, lust, enemity and violence witnessed in our daily interactions with people stand as proofs of this deplorable state of life. We also notice that the remedies which appeared effective only a few year ago have now started inducing side effects which are undesirable.

Until and unless the environmental toxins and the demoralising factors are neutralised at the same rate with which they are spread, there is little hope of healthy survival. Sustaining the ecological balance, purifying the environment and developing healthy body and mind are the tasks which are demanding timely action from each and every individual. A simple *Agnihotra* called *Balivaishva* is a practice, which can be considered as the cheapest and simplest positive effort in this regard, if performed as an essential activity of the daily life.

The process of performing daily *Agnihotra*, as described below, is very simple, inexpensive and requires only a few minutes to perform. Yet it is very effective and beneficial in all eventualities. Performance of the *Yagna* (*Agnihotra*), is free from the barriers of nationality, caste, creed, religion, age or sex etc. Anyone who wants to be healthy, happy and stress-free should start performing *Agnihotra* at the first available opportunity.

In the *Balivaishva Agnihotra,* five morsels of fresh vegetarian food are offered everyday before taking the meals in the morning and evening. These offerings are made in the fire lit on the cowdung- cake kept in the copper pot (*Kund*) with the chanting of *Gayatri Mantra*. The detailed survey and systematic studies made by the Brahmavarchas Shodh Sansthan have shown that the physical health and psychological development of the members of the families, where *Balivaishva* is performed regularly is of excellent order. Generally, happy and helpful atmosphere is found in such houses.

Another kind of *Agnihotra,* which is specifically tuned with the biological clock and the vital energy cycle has been studied by the 'Institute for studies in Vedic Sciences' located in --- Akkalkot, (District Solapur) in Maharastra, India. This institute is acting as a network for evaluating the experiences of people, who perform *Agnihotra* on the basis of results obtained from time to time. The main features of this *Agnihotra* are described below [5].

(i) Biological Clocks and *Agnihotra* Timings:

Sunrise and Sunset are the two most important transitional epochs of day on our planet.They exert tremendous impact on living organisms. During these periods, changes of great magnitude take place in the ecosphere which cause vital impact on life and environment. Synchronising performance of *Agnihotra* with these activated moments results in attracting a stream of vital, life sustaining energies of the solar system.

The daily fluctuations in the body temperature, heart rate and blood pressure have been found associated with these exact moments. The science of Yoga and Nadi system too have been observed to be greatly influenced by these planetary transitional moments. The breathing patterns automatically undergo drastic changes. These physical changes and re-adjustments have great impact on the psychosomatic makeup of human beings. Hence the process of *Agnihotra* which coincides with them, plays an important role in harmonizing the natural functioning of human mind and body.

The beneficial effect of sunrise *Agnihotra* sustains the atmosphere till sunset and the sunset *Agnihotra* sustains the atmosphere till the sunrise. In this manner, an unending and active 'healing cycle' is established in the houses where this *Agnihotra,* is performed every day.

(ii) Cowdung Cake:

Importance and medicinal qualities of cow-products have been known since time immemorial and forms a part of day-to-day usage. Cowdung contains plenty of menthol, ammonia, phenol, indole compounds, formalin and its eradicates the pathogenic micro-organisms.

Fresh cowdung possesses medicinal and curative properties. It is a proven fact that tremendous active beneficial properties are inherent in the cowdung cake and in the fumes that emanates after burning it. Some Russian scientists have observed even anti-radiational properties of cowdung.

(iii) Offerings:

Two offerings of unbroken raw rice smeared with cow's pure ghee are offered during each *Agnihotra*. According to Ayurveda, Cow's ghee is a tonic and a cardiac stimulant. The invigorating gases produced by the burning of cow's pure *ghee* act in balancing the cycle of nature. Cow's pure *ghee* removes all pathogenic bacteria and works effectively in purification of the atmosphere making it sufficiently fit for mankind, plants and the life on earth.

(A) Performing the Sunrise *Agnihotra*:

(1) Fire preparation:

About 5 to 10 minutes before the Sunrise, arrange pieces of dry cow dung cakes in the *Agnihotra* pot. First take a small piece of cowdung cake and place it at the bottom of the pot. Now put *Guggal* or camphor or cotton wick duly soaked in cows ghee on the bottom piece. Then start arranging the pieces of cow dung cake around it neatly leaving a little empty space in the centre to put the offerings. Use a match stick to lit the fire. If necessary, use the fan so that all pieces are fully ablaze.

(2) Material:

Take two pinchful of clean, unbroken rice grains on the palm of your left hand or in a small dish. Smear these rice grains with a few drops of cow's pure *ghee*. Divide this ghee smeared rice grains in two parts.

(A) Morning Agnihotra:

Exactly at the time of sunrise, utter first *Mantra Suryaya Swaha*; and offer one part of the rice grains to the fire with the word *Swaha* and recite '*Idam Suryaya Idam Na Mama*' to complete the first oblation. Offer other part of the rice grains to the fire after saying '*Prajapataye Swaha*' and complete it by uttering '*Idam Prajapataye Idam Na Mama*'. Concentrate on the fire till the offerings are fully burnt. The morning *Agnihotra* is thus completed.

(B) Sunset *Agnihotra*:

In the evening, before sunset remove very carefully the morning *Agnihotra*'s ash from the pot and put it in a bag or box specially kept aside for it. Repeat the procedures 1 and 2 of the morning *Agnihotra*.

Exactly at sunset time, recite *Agnaye Swaha,* and offer the first part of the rice grains immediately with the word '*Swaha*' and utter '*Idam Prajapataye Idam Na Mama*'. Concentrate on the fire till the offerings are fully burnt. This concludes the evening *Agnihotra*.

6. SUBTLE ASPECTS OF *YAGNA*

What we discussed above is all about the material aspects of *Yagna*. The extremely subtle effects are byfar the more important. Like humans, matter too, has three bodies -- physical, subtle and causal. The body which eats, sleeps, walks, acts; which consists blood, flesh etc., is visible man's physical body. Subtle body is that which thinks, considers and controls the physical body. Causal or astral body is that in which faith, convictions aspirations etc., are deeply rooted. The subtle body is much more powerful as compared to the physical body. The causal body is several times more powerful than the subtle body.

The causal energy underlying all the *Havishya* used in *Yagna* is stimulated by the rituals prescribed for the *Yagna* performance. Only then alone it is possible to affect de-

sired changes in the mind and consciousness of the participants. If this is not done, the effects of *Yagna* will be limited to the physical - chemical effects of vaporization of specific substances. No doubt, several benefits can be derived by these effects too. The fumes of *Yagna* remove foul smell and spread soothing fragrance. It can also help in controlling virus infection and thereby promoting physical health. This is, however, an insignificant achievement, as compared to the vast potential of *Yagna* [2].

Importance of *Yagna* lies in the subtle power of the substances which are offered in the sacrificial fire. The selection of a particular wood or *Havan Samagri* depends on the purpose for which *Yagna* is performed.

In order to stimulate the causal energy of the offering, help of the science of *Mantras* is taken. The conductor of *Yagna* takes all precautions to ensure that the *Mantras* are uttered, pronounced and appropriated correctly in the pitch voice, rhythm and tone duly prescribed. Strict discipline is required to be maintained, and there should be no deviation. *Shabda* (The eternal and cosmic sound) is termed as *Brahm.* Ordinarily, it is used for exchanging of thoughts but at subtler and higher levels in *Mantra, Shabda* plays the role of getting transformed into potential energy.

The entire basis of the *Mantra Shastra* stands on the footing that the selection, interlocking and appropriation of words in a *Mantra* exist in such a way that it becomes

possible to get miraculous advantage by making the causal energy of *Shabda* specifically enhanced and made more powerful.

All the pots and even water used in the *Yagna* are purified by specific *Mantras* before use. The fire-wood (*Samidhas*) are washed, dried and used after they are duly sanctified by *Mantras*. The process of *Vedi pujan* and *Yagnashala* pujan are resorted to make the *Havan kund* live --- with awaken causal energy. This as a whole is the scientific process of mass medication which strengthens the spiritual basis of the *Yagna* process.

It is generally experienced that *Yagiya* (*Agnihotra*)--- atmosphere is very compatible and alluring for attaining spiritual uplift. Dr. Motohama of Tokyo, Japan has studued the effects of *Agnihotra,* with his instrument for measuring electric fields surrounding the body. He has reported [5] that -- after performing an *Agnihotra*, the *Anahata Chakra* (cardiac plexus) exhibits similar condition that exists after psychic and spiritual healings.

6.1. *Mantras* --- Subtle Dimensions of Sound:

Mantras are pronounced in *Yagna* in accordance with the prescribed methods and rules. It benefits the persons concerned and stimulates useful vibrations and causes beneficial excitements in the environment. Besides, it makes possible the stimulation of causal energy of the materials used in *Yagna* to such an extent that the hidden potentialities underlying them are greatly enhanced. Articles

made scared and pious with the help of *Mantra*, if offered by way of blessing act more effectively than even medicines. It is by involving the causal energy of material (*Havishya*) before it is offered in the sacrificial fire, that exemplary successful results are produced to such an extent that even an ordinary substance possesses extraordinary specific powers. If the *Havishya* is simply dropped in the fire, it only creates fragrant smell and proves useful to limited extent. Without chanting *Mantras* it will not be possible to derive benefits, which are expected by performing a *Yagna*.

When a *Mantra* is chanted collectively during a *Yagna*, its sonic power increases exponentialy due to --- (i) the collision of the sound waves (generated by the *Mantra* chanting) with the thinnest 'flame-screen' of the quivering fire of *Yagna* and the high frequency vibrations generated thereby; (ii) the subtle interactions of the sound-waves of the *Mantras* with the cosmic energy centre (*Devta*) associated with their specific configurations as carry *Shabdas*; (iii) the fundamental thermodynamic effects associated with the fumigation of the sacrificed *Havishya* in the *Yagna* fire; (iv) the compounded effects of the vital, mental and causal energies of the people, who are in performing the *Yagna*.

The sound-waves, of the *Mantras*, instead of proceeding in their natural circular motion, are carried upwards in a spiral form by the force of the electrons generated by fumigation of the *Havishya* after sublation in *Yagna* - fire.

The mutual collisions of these fast moving electrons along with the superimposition of the timely phased, collective sonic patterns of the *Mantras* result in the penetration in and out of the ionosphere. The collective chanting of *Mantras* in specific rhythm in front of the *Yagna* flames gives rise to unique sound-waves which have infinite radiant effects in the outer space [1].

The subtle effects of *Mantras* on the consciousness are accomplished only if the reciters are authentic with respect to the proper and controlled use of their voice and tongue in confirmity to the integrity and sanctity of their thoughts, emotions, character and deeds in every aspect of life. The subtle science of syllables described in the ancient Indian scriptures classifies four levels of voice (*Vani*) namely, the *Baikhari, Madhyama, Para,* and *Pashyanti* and highlights the importance of the spiritual practices (*Sadhanas*) of their realisation through *Gayatri* and *Yagna*.

The wonders of ultra and infra levels of sound can be achieved by the refinement of the first and most elementary of the above mentioned four levels of the *Vani*. The *Madhyama* type works in the domain of thought waves and if refined further, leads to the subtler sounds of *Para* and *Pashyanti,* which are described as the *Vanis* for spiritual communications and 'conversation' with the *Brahm*. if a spiritually refined, expert performs a *Yagna*, the *Mantras* recited by him or her contain the impact of all the four awaken *Vanis*. Such *Yagnas* indeed create a spir-

itually charged atmosphere, which elevates the consciousness of all living beings along with harmonizing the material systems in nature.

Advancement of the on going research in the material based analysis of the effects of *Yagnas* along with of the subtle-science of *Yagna* and *Gayatri* would ensure bringing a bright future for humanity and for the life on this earth, as a whole.

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